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Keeping technology in Australia

The Small Technologies Industry Uptake Program (STIUP) has helped to keep the development of nanomaterials in Australia, winning praise and gratitude from Dr Terry Turney, CTO of Micronisers Australasia Pty Ltd.

In November last year Micronisers, a nanomaterials development and manufacturing company, was awarded a STIUP feasibility voucher for $10,000 to access specialist equipment and expertise from the CRC for Polymers.

Terry said the STIUP voucher enabled Micronisers to continue their product development in Australia.

In order to remain competitive Micronisers are seeking to improve the performance of micro and nano-sized Zinc Monoglycerolate (ZMG), a nucleating agent, at significantly lower dose rates.

ZMG is an additive with applications in products ranging from personal care products to bumper bars and washing machines. In takeaway containers the additive maintains wall thickness, thereby strengthening the container.

Lower-priced nucleating agents will soon be on the market when patents for the production of nucleating agents, currently controlled by competitors of Micronisers, expire.

Concerns about the challenges of these cheaper additives to Micronisers' market share prompted the project.

After initial developments with the CRC for Manufacturing, Micronisers needed access to commercial-scale polymer extrusion equipment to improve the dispersion of the nanomaterial into plastic.

The STIUP program enabled Micronisers to access existing infrastructure at the CRC for Polymers. Housed at CSIRO, the CRC have an extruder that performs the level of mixing required.

"This is very much a work in progress still, but none of this would have happened without that voucher," said Terry.

If the development process had been transferred to Europe, there would have been a danger of the manufacturing process following as well.

"For Micronisers, [the voucher] kept IP in Australia and it's improved the prospect of maintaining manufacturing in Australia," said Terry.

The work funded by the feasibility voucher involved experimenting with different variations of the additive and loading rate.

The voucher provided access to the machine and to the specialist skills of the operator as well.

The results were sufficiently promising to prompt Micronisers to apply, and be awarded, a technological voucher for $47,000 in March this year to continue refining the process.

The results gained under the first voucher have facilitated the work currently in progress under the technological voucher, involving more detailed refinements to the nanostructured product to get it to a commercially-ready state.

"Now we need to go back and do more work and in a more thorough way," said Terry.

Terry praised the organisation behind STIUP, saying the process ran smoothly and met their necessary timeframes.

"I found that the people who are running the program made this process really easy for us," he said.

Terry went further saying that without the efforts of the Department of Business and Innovation, and in particular Noel Dunlop, Micronisers may have applied for the wrong voucher with the possibility of not receiving it.

"In hindsight we were trying to apply the wrong thing and through discussions with Noel Dunlop we sorted out how we should do it to be most effective for everyone", said Terry.

Terry said Micronisers are grateful to the scheme for the opportunities it gave them.

"The Victorian Department of Business and Innovation is probably the most innovative in Australia in terms of the manufacturing sector," said Terry.

"It's not sitting there waiting for something to happen. It actually went out and made it happen."

The Victorian Government's STIUP program is designed to give Victorian business the opportunity to increase their competitiveness by using small technologies to explore, adopt and integrate into improved products, processes and services.

Micronisers is a Dandenong-based company founded in 1987 that manufactures and sells products in Australia and internationally, as well as distributing through licensing agreements with several large multinational companies such as BASF, the largest plastics additive producer in the world.

For more information about the Small Technologies Industry Uptake Program (STIUP) please visit: http://stc-melbourne.com/index.php/stiup

Media Enquiries:

Katherine Wilkinson
escalier B communications
Katherine.L.Wilkinson@gmail.com
+61 400 309 554